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The **FERTILIZER** SITUATION for 1952 - 1953



**PRODUCTION AND MARKETING ADMINISTRATION
UNITED STATES DEPARTMENT OF AGRICULTURE**

Washington, D. C.

September 1952



PREFACE

The Fertilizer Situation for 1952-53 is the tenth in a series of reports on fertilizers issued by agencies within the U. S. Department of Agriculture.

This report has been prepared by the Fertilizer Staff, Office of Materials and Facilities, Production and Marketing Administration.

In the preparation of the report helpful assistance was given by the Bureau of the Census, Department of Commerce; Bureau of Mines, Department of the Interior; Chemical Division, National Production Authority; and the Bureau of Plant Industry, Soils and Agricultural Engineering, Department of Agriculture. This assistance is gratefully acknowledged.

An innovation is being attempted this year, in that an early and preliminary forecast of the 1952-53 fertilizer supply is being combined with the usual mid-summer tabulations showing reported deliveries of the three primary plant nutrients during the previous fertilizer year.

It is intended that a supplemental report reflecting any changes or developments will be issued in January, 1953.

THE FERTILIZER SITUATION FOR 1952-53

(Preliminary)

The 1952-53 Outlook

In the light of information at hand regarding domestic production and assuming usual import-export balances, it is estimated that the aggregate 1952-53 supply of the three primary plant nutrients will exceed by some 12 percent the record amount available for use in 1951-52.

Nitrogen (N)

Based on current information as to when a number of new synthetic ammonia plants are expected to be completed, making allowance for some increased production at by-product plants and assuming about the same import-export balance as in 1951-52, the 1952-53 available supply is presently estimated at 1.585 million tons of nitrogen (N), representing an increase of slightly more than 11 percent above the reported 1951-52 supply of 1.425 million tons.

Details of the 1952-53 forecast for nitrogen by type and class of material are shown in table 1. For comparison purposes details of the 1951-52 nitrogen supply, as reported, are shown in table 1-A.

It will be noted that the forecasted supply of solid nitrogen materials (dry nitrogen) in 1952-53 represents approximately 62 percent of the total supply, and solutions and liquid materials (wet nitrogen) 38 percent. For the previous year these percentages were approximately 65 and 35 respectively.

Phosphates (P₂O₅)

The producers of superphosphates and related phosphatic fertilizer materials were able to overcome some of their sulfur and sulfuric acid problems during the 12 months to June 30, 1952, with the result that production was better than anticipated. Assuming some continued

CHICAGO, ILL., MAY 1, 1914

REPORT OF THE BOARD OF TRUSTEES

The Board of Trustees of the American Medical Association has the honor to acknowledge the receipt of the report of the Committee on the Proposed Revision of the Code of Ethics, and to express its appreciation of the thorough and careful study which has been given to the subject by the Committee.

(Continued)

The Board of Trustees has also received the report of the Committee on the Proposed Revision of the Code of Ethics, and has considered the same in its meeting of April 15, 1914. The Committee has recommended that the Code be revised in certain particulars, and that the revised Code be adopted by the Association at its annual meeting in 1915. The Board of Trustees has approved the recommendation of the Committee, and has authorized the publication of the revised Code in the form of a separate pamphlet, to be distributed to the members of the Association.

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improvement and the availability of new sources of sulfuric acid, the supply of available phosphates for 1952-53 is forecast now at 2.465 million tons, available phosphoric oxide (P_2O_5) basis, as set out in table 2. An additional 300 to 350 thousand tons of total phosphoric oxide can be expected in the form of P_2O_5 content of ground phosphate rock and similar materials.

The 1952-53 forecasted supply of available phosphoric oxide is about 10 percent above the 2.235 million tons which were put into domestic trade channels in 1951-52, according to data now available. Details of the 1951-52 supply are shown in table 2-A.

Potash (K_2O)

The 1952-53 supply of potash (K_2O) for fertilizer purposes will reflect production of new facilities plus incremental increases of older operations. It is possible that some increase in imports might occur. Exports are expected to show some increase. Taking these factors into account, a 1952-53 supply of 1.850 million tons of potash (K_2O) is forecast. This amount is about 17 percent above the reported 1951-52 supply of 1.585 million tons. Details are shown in tables 3 and 3-A respectively.

General

The Fertilizer Expansion Program

In order to meet desired levels of crop production in 1954-55, it has been estimated that there will be needed for domestic fertilizer purposes 2.185 million tons of nitrogen (N), 3.485 million tons of available phosphoric oxide (P_2O_5), and 2.185 million tons of potash (K_2O). The quantities represent increased production respectively of about 900 thousand tons of N, 1.3 million tons of P_2O_5 , and 740 thousand tons of K_2O over the 1950-51 domestic supply for fertilizer purposes.

Nitrogen (N)

The estimated nitrogen requirements of the Department of Agriculture for fertilizer purposes and the estimates of the National Production Authority for industrial and military requirements by 1955 were incorporated into the Defense Production Administration's Expansion Goal Number 9. The program called for approximately 1.3 million tons of added nitrogen capacity by 1955 over the installed capacity of 1.639 million tons as of January 1, 1951.

Applicants for necessity certificates and CMP-4C construction permits have advised NPA that they proposed to supply approximately 900,000 tons of nitrogen as nitrogenous fertilizers in the form of anhydrous ammonia



or as solid compounds, such as ammonium or sodium nitrates, ammonium nitrate-limestone mixtures, ammonium sulfate, ammonium phosphates, and urea. This expansion program progressed through three stages.

The first stage provided 244 thousand annual tons without the incentive of accelerated tax amortization. This step included the rehabilitation of the Morgantown Ordnance Works, some increase at the TVA plant, and expansion at four privately owned facilities. This part of the program is about completed, except for one plant which is due in January, 1953.

In the second stage certificates of necessity were granted to 13 plants having a combined annual capacity of 556 thousand tons of nitrogen. Four of these plants with a total capacity of 88 thousand tons were completed and in operation prior to the beginning of the 1952-53 fertilizer season. Nine plants with a capacity of 469 thousand tons annually are to be completed. Two are scheduled for operation during 1952-53; the other seven are not expected to be completed until the 1953-54 season.

The third stage included 12 plants with an annual capacity of approximately 500 thousand tons of nitrogen. Two of these are expected to be in operation for a part of 1952-53; the others are planned to come in during 1953-54.

There have been some drop-outs in the program, but those were promptly replaced by other applicants. It is possible that some of the plants for which certificates were granted will not be built. In view of the interest in this field it is believed that new or revived applications of other companies will be offered in replacement, and that the nitrogen expansion goal will be achieved.

Phosphates (P_2O_5)

The Defense Production Administration Expansion Goal No. 149-A, Phosphate Fertilizer, issued August 5, 1952, calls for domestic production by July 1, 1954 of 3.550 million tons of phosphoric oxide (P_2O_5). An increase in production of 1.400 million tons P_2O_5 over that for FY-1951 will be required to meet this goal. This includes 1.300 million tons estimated as required for domestic use and 100,000 tons for export.

Due to the fact that the phosphate expansion goal has only recently been formalized, and to the uncertainty which surrounds the sulfur-sulfuric acid supply picture, no attempt is being made at this time to indicate prospective phosphate supplies beyond 1952-53. Increases can be expected in 1953-54 and 1954-55, and achievement of the goal of 3.485 million tons (P_2O_5 basis) is believed to be a possibility.

Phosphate Rock

Defense Production Administration Expansion Goal No. 138, issued July 15, 1952 set an interim goal of five million long tons of P_2O_5 (content basis) by July 1, 1954. This target is roughly 15 million long tons

of phosphate rock.

This goal represents an increase of 1.5 million long tons of P_2O_5 (content basis) over the 1950-51 production of 3.5 million long tons. The expansion needed is to be re-examined during the Fall in the light of prospective sulfuric acid availabilities.

Several applications for necessity certificates covering new plants or expansions have been filed with Defense Materials Procurement Agency by phosphate rock producers. It is intended that implementation of the phosphate rock expansion program will be coordinated with the phosphatic fertilizer program.

Potash (K_2O)

A goal for the domestic production of potash at an annual capacity of two million tons K_2O basis by July 1, 1954 was set by Defense Production Administration Expansion Goal No. 141, dated July 22, 1952.

This quantity represents an expansion of 600 thousand tons over the January 1, 1951 capacity of approximately 1.4 million tons.

Two new companies have entered the Carlsbad field, increasing the number of major operators to six, one of which is located in California. In addition there is some production in Utah and in Michigan. One of the new mines near Carlsbad recently started production; the other is expected to start within the next few months.

It appears that domestic capacity to produce potash will be sufficient, plus normal imports, to meet agriculture's stated requirement for 1955 crops.

A National Program for More Efficient Use of Fertilizer and Lime

This program, announced on September 11, 1952, is a joint activity of the U.S. Department of Agriculture and the Land-Grant Colleges and Universities. It is intended to bring about more efficient use of fertilizer and lime as one means of increasing food and fiber production, building up the productivity of the Nation's farm land, and increasing net returns to farmers.

A Steering Committee representing the Department and the Land-Grant Colleges and Universities will serve at the National level in guiding the programs.

Within the States and counties leadership will be the responsibility of the Land-Grant Colleges and Universities working with local representatives of other interested State and Federal agricultural agencies and private groups.

[illegible]

The National Soil and Fertilizer Research Committee will collaborate by encouraging State agricultural workers to interpret and prepare for dissemination, in a form suitable for educational purposes, the available data on crop response to increments of plant nutrients and lime and profitable levels of use under different conditions.

The continuing cooperation of the fertilizer and lime industries and other interests is invited to the end that the activities of such groups will be coordinated with the program. The continued collaboration and participation of the State fertilizer control officials and the Tennessee Valley Authority will contribute substantially to the success of the program.

Table 1. -- NITROGEN: Estimated 1952-53 supply for fertilizer purposes,
United States and possessions

In tons of 2,000 pounds nitrogen (N)								
Source	:Ammonium : nitrate : 1/	:Ammonium : sulfate : 2/	: Other : solids : 3/	: Natural : organics : 4/	:N solutions : compound : 5/	: NH ₃ for : ammoniation : 5/	: NH ₃ for : direct : application : 6/	: Total : by : Source
<u>U. S. production</u>								
Synthetic ammonia	275,000	140,000	120,000	—	330,000	35,000	250,000	1,150,000
By-product ammonia	—	178,000	—	—	—	2,000	—	180,000
Natural organics	—	—	—	35,000	—	—	—	35,000
Total	275,000	318,000	120,000	35,000	330,000	37,000	250,000	1,365,000
<u>Exports</u>	2,000	42,000	20,000	1,000	20,000	—	—	85,000
Net domestic production	273,000	276,000	100,000	34,000	310,000	37,000	250,000	1,280,000
<u>Imports</u>	110,000	40,000	150,000	5,000	—	—	—	305,000
Total supply								
U. S. and possessions	383,000	316,000	250,000	39,000	310,000	37,000	250,000	1,585,000

For the purpose of this tabulation the following groupings have been made:

- 1/ Includes estimated ammonium nitrate, fertilizer grade, ammonium-nitrate limestone mixtures, and ammonium sulfate-nitrate.
- 2/ Includes estimated ammonium sulfate content of imported and exported mixed fertilizers.
- 3/ Includes estimated ammonium phosphates, sodium nitrate, urea mixtures, calcium nitrate and cyanamid.
- 4/ Estimated nitrogen content of natural organics used in commercial fertilizer.
- 5/ Includes estimated nitrogen content derived from solutions and ammonia in exported ammoniated superphosphates and mixed fertilizers.
- 6/ Includes compound nitrogen solutions and ammonium nitrate solutions used for this purpose.

Table 1-A. — NITROGEN: 1951-52 supply for fertilizer purposes,
United States and possessions (trade delivery basis)

Source	In tons of 2,000 pounds nitrogen							
	:Ammonium	:Ammonium	: Other	: Natural	:N solutions:	NH ₃ for	NH ₃ for	Total
	: nitrate	: sulfate	: solids	:organics:	compound	ammoniation:	direct 8/:	by
	: <u>3/</u>	: <u>4/</u>	: <u>5/</u>	: <u>6/</u>	: <u>7/</u>	: <u>7/</u>	:application:	Source
<u>U. S. production</u>								
Synthetic ammonia <u>1/</u>	246,000	131,000	106,000	—	317,000	33,000	171,000 <u>9/</u>	1,004,000
By-product ammonia <u>2/</u>	—	166,000	—	—	—	2,000	—	168,000
Natural organics	—	—	—	36,000	—	—	—	36,000
Total	246,000	297,000	106,000	36,000	317,000	35,000	171,000	1,208,000
<u>Exports 1/</u>	1,000	36,000	18,000	1,000	17,000 <u>10/</u>	—	—	73,000
Domestic deliveries, U. S. sources	245,000	261,000	88,000	35,000	300,000	35,000	171,000	1,135,000
<u>Imports 1/</u>	110,000	41,000	134,000	5,000	—	—	—	290,000
Total supply, U. S. and possessions	355,000	302,000	222,000	40,000	300,000	35,000	171,000	1,425,000

- 1/ Based on special reports from industry components and Bureau of the Census data.
- 2/ Based on reports of the Bureau of Mines and information from industry components.
- Principally to prevent disclosure of individual company operations the following groupings have been made:
- 3/ Includes ammonium nitrate, fertilizer grade, ammonium-nitrate limestone mixtures, and ammonium sulfate-nitrate.
- 4/ Includes estimated ammonium sulfate content of imported and exported mixed fertilizers.
- 5/ Includes ammonium phosphates, sodium nitrate, urea mixtures, calcium nitrate and cyanamid.
- 6/ Estimated nitrogen content of natural organics used in commercial fertilizers.
- 7/ Includes estimated nitrogen content derived from solutions and ammonia in exported ammoniated super-phosphates and mixed fertilizers.
- 8/ Includes compound nitrogen solutions and ammonium nitrate solutions used for this purpose.
- 9/ Includes small amount of by-product ammonia.
- 10/ Includes small amount of NH₃ for ammoniation.

ESTIMATED NITROGEN REQUIREMENTS FOR 1954-55 COMPARED WITH REPORTED USAGE IN 1950-51 REGIONAL BASIS IN TONS OF NITROGEN (N)

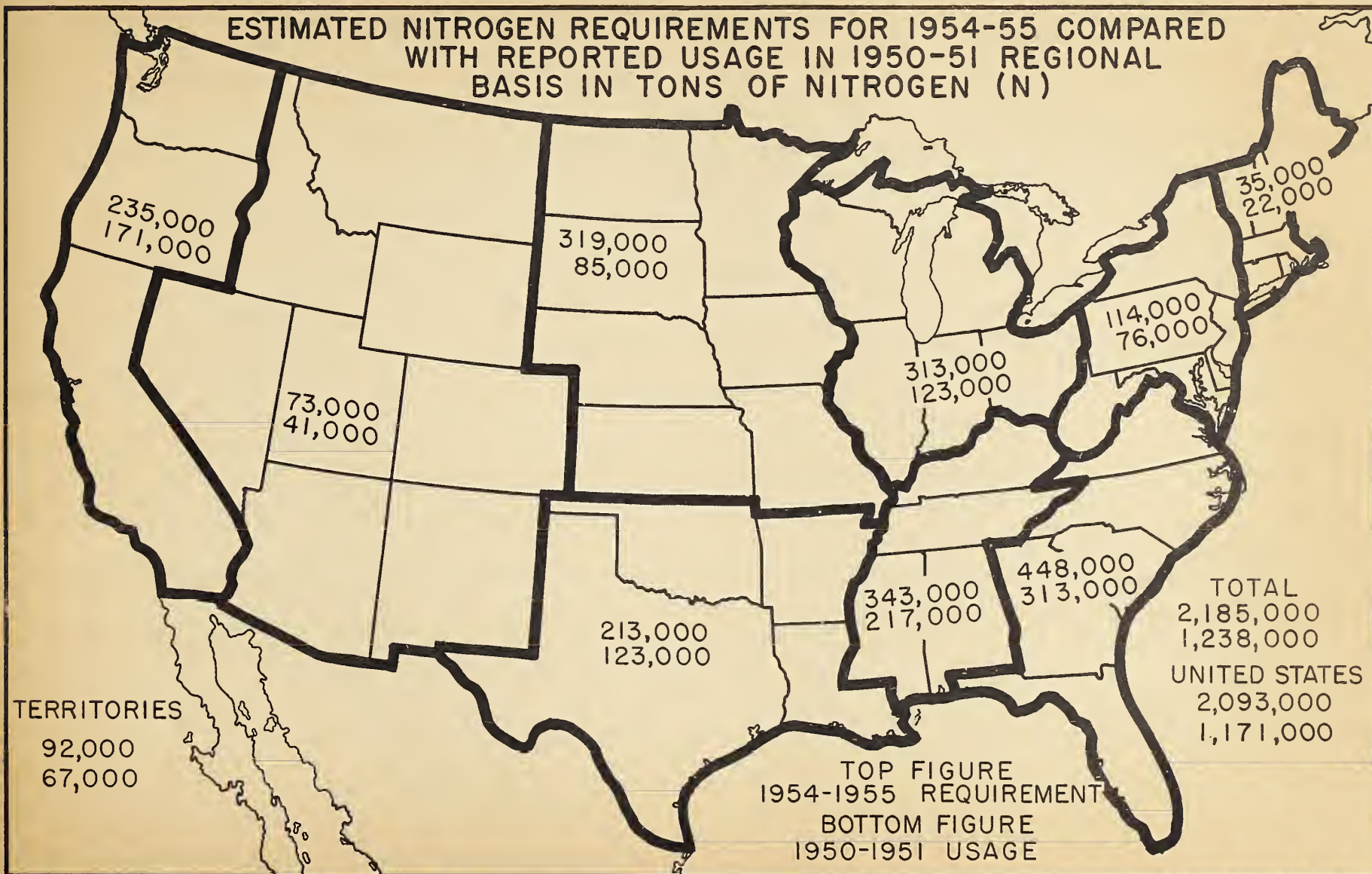


Table 2. -- PHOSPHATE: Estimated 1952-53 supply for fertilizer purposes,
United States and possessions

In tons of 2,000 pounds available phosphoric oxide (P_2O_5)

Source	: Normal :superphosphate:	: Concentrated :superphosphate:	: Wet-base : goods	: Other <u>1/</u>	: Total by source
<u>U. S. production</u>	1,788,000	510,000	16,000	206,000	2,520,000
<u>Exports</u>	66,000	11,000	--	18,000 <u>2/</u>	95,000
Net supply, U. S. production	1,722,000	499,000	16,000	188,000	2,425,000
<u>Imports</u>	1,000 <u>3/</u>	--	--	39,000 <u>2/</u>	40,000
Total supply, U. S. and possessions	1,723,000	499,000	16,000	227,000	2,465,000

1/ Includes estimates for complex phosphatic materials.

2/ Includes P_2O_5 content of prepared phosphatic mixtures, ammonium phosphates and ammoniated superphosphates.

3/ Includes small quantity of concentrated superphosphates.

Table 2-A. — PHOSPHATE: 1951-52 supply for fertilizer purposes,
United States and possessions (trade delivery basis)

In tons of 2,000 pounds available phosphoric oxide (P_2O_5)

Source	: Normal :superphosphate:	: Concentrated :superphosphate:	: Wet-base : goods	: Other <u>1/</u>	: Total by source
<u>U. S. production</u>	1,745,000	334,000	15,000	196,000	2,290,000
<u>Exports</u>	65,000	11,000	—	18,000 <u>2/</u>	94,000
Net supply, U. S. production	1,680,000	323,000	15,000	178,000	2,196,000
<u>Imports</u>	1,000 <u>3/</u>	—	—	38,000 <u>2/</u>	39,000
Total supply, U. S. and possessions	1,681,000	323,000	15,000	216,000	2,235,000

1/ Includes estimates for complex phosphatic materials.

2/ Includes P_2O_5 content of prepared phosphatic mixtures, ammonium phosphates, and ammoniated superphosphates.

3/ Includes small quantity of concentrated superphosphates.

AVAILABLE PHOSPHORIC OXIDE (PHOSPHATE) REQUIREMENT FOR
1954-55 COMPARED WITH REPORTED USAGE IN 1950-51
REGIONAL BASIS IN TONS OF PHOSPHORIC OXIDE (P_2O_5)

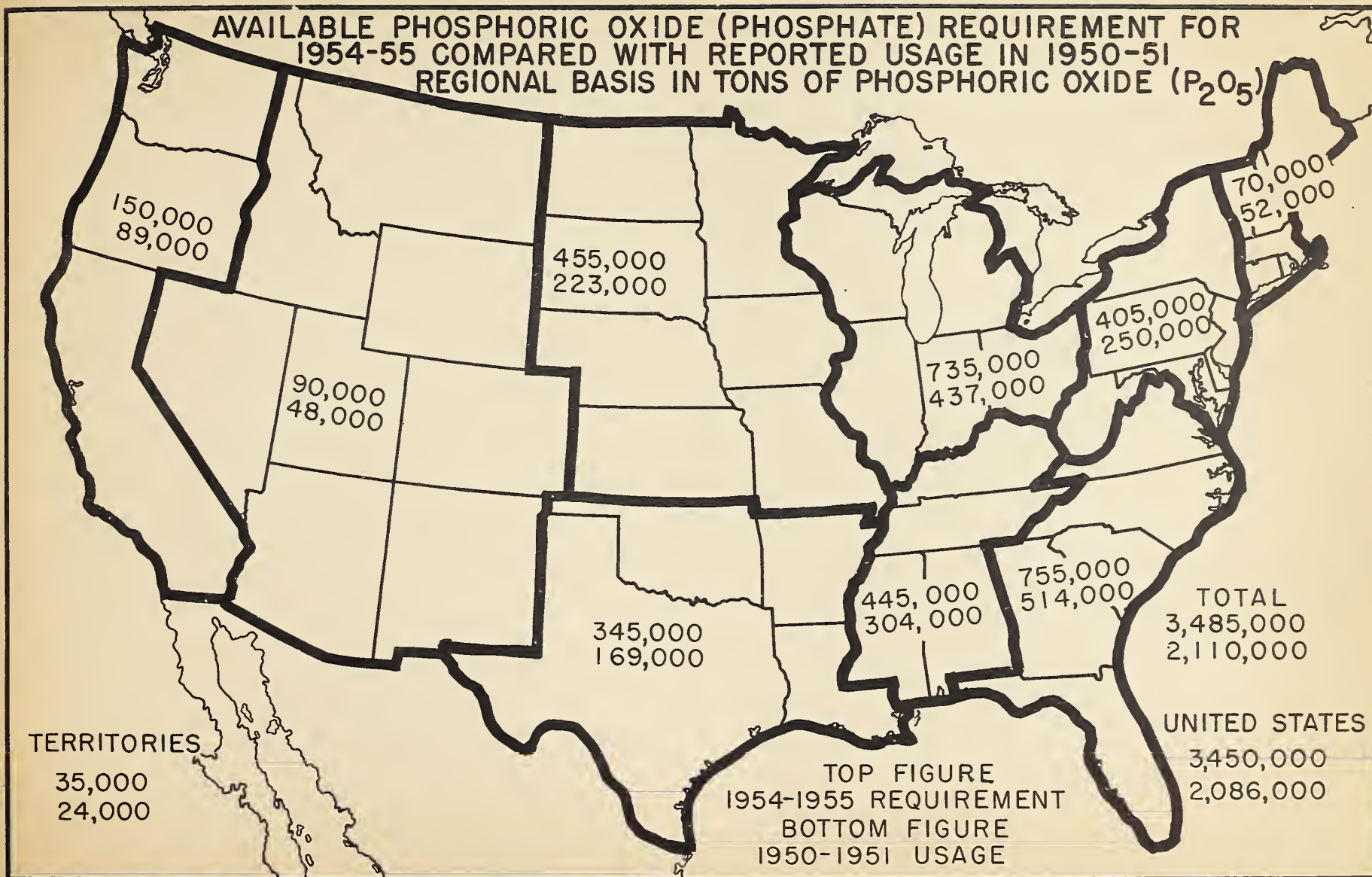


Table 3. — POTASH: Estimated 1952-53 supply for fertilizer purposes,
United States and possessions

In tons of 2,000 pounds potassium oxide (K_2O) content

Source	:Muriate of : potash :60% and 50% grade:	:Sulfate of potash: : & sulfate of : potash magnesia :	Manure : salts:	Miscellaneous & by- : product materials : : 1/	Total : by : Source
Deliveries from U. S. production	1,510,000	99,000	2,000	39,000	1,650,000
<u>Exports</u>	59,000	10,000	—	6,000	75,000
Net supply - U. S. production	1,451,000	89,000	2,000	33,000	1,575,000
<u>Imports</u>	247,000	23,000	—	5,000	275,000
Total supply, U. S. and possessions	1,698,000	112,000	2,000	38,000	1,850,000

1/ Includes potash content of oilseed meal and by-product residues used for fertilizer and
calculated potash content of mixed fertilizers, exported and imported.

Table 3-a. — POTASH: 1951-52 supply for fertilizer purposes,
United States and possessions (trade delivery basis)

In tons of 2,000 pounds potassium oxide (K₂O) content

Source	: Chloride of : potash : 60% and 50% grade:	: Sulfate of potash: : & sulfate of : potash magnesia :	: Manure : : salts: : :	: miscellaneous & by- : product materials : : 3/ : Source	Total by
Deliveries from U. S. production <u>1/</u>	1,259,000	88,000	2,000	35,000	1,384,000
<u>Exports</u> <u>2/</u>	51,000	6,000	—	6,000	63,000
Net supply - U. S. production	1,208,000	82,000	2,000	29,000	1,321,000
<u>Imports</u> <u>2/</u>	233,000	21,000	—	5,000	234,000
Total supply, U. S. and possessions	1,446,000	103,000	2,000	34,000	1,585,000

1/ Based on data supplied by the American Potash Institute.

2/ Calculated from Bureau of the Census reports.

3/ Partly estimated; includes potash content of oilseed meal and by-product residues used for fertilizer and calculated potash content of mixed fertilizers, exported and imported.

